SEQUENCE LISTING

<110> Contreras, Roland
Callewaert, Nico L. M.
Vervecken, Wouter
Kaigorodov, Vladimir

<120> MODIFICATION OF PROTEIN GLYCOSYLATION IN METHYLOTROPHIC YEAST

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<141> 2003-11-14

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<213> S. cerevisiae

<400> 10

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Gln Gln Tyr Ile Pro Ser Ser Ile Ala Ala Phe Asp Phe Thr Ser Gly
35 40 45

Ser Ile Ser Pro Glu Gln Gln Val Ile Ser Glu Glu Asn Asp Ala Lys
50 55 60

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Lys Leu Glu Gln Ser Ala Leu Asn Ser Glu Ala Ser Glu Asp Ser Glu
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Ala Met Asp Glu Glu Ser Lys Ala Leu Lys Ala Ala Ala Glu Lys Ala
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Asp Ala Pro Ile Asp Thr Lys Thr Thr Met Asp Tyr Ile Thr Pro Ser
            100                 105                 110

Phe Ala Asn Lys Ala Gly Lys Pro Lys Ala Cys Tyr Val Thr Leu Val
        115                 120                 125

Arg Asn Lys Glu Leu Lys Gly Leu Leu Ser Ser Ile Lys Tyr Val Glu
    130                 135                 140

Asn Lys Ile Asn Lys Lys Phe Pro Tyr Pro Trp Val Phe Leu Asn Asp
145                 150                 155                 160

Glu Pro Phe Thr Glu Glu Phe Lys Glu Ala Val Thr Lys Ala Val Ser
                165                 170                 175

Ser Glu Val Lys Phe Gly Ile Leu Pro Lys Glu His Trp Ser Tyr Pro
            180                 185                 190

Glu Trp Ile Asn Gln Thr Lys Ala Ala Glu Ile Arg Ala Asp Ala Ala
        195                 200                 205

Thr Lys Tyr Ile Tyr Gly Gly Ser Glu Ser Tyr Arg His Met Cys Arg
    210                 215                 220

Tyr Gln Ser Gly Phe Phe Trp Arg His Glu Leu Leu Glu Glu Tyr Asp
225                 230                 235                 240

Trp Tyr Trp Arg Val Glu Pro Asp Ile Lys Leu Tyr Cys Asp Ile Asn
                245                 250                 255

Tyr Asp Val Phe Lys Trp Met Gln Glu Asn Glu Lys Val Tyr Gly Phe
            260                 265                 270

Thr Val Ser Ile His Glu Tyr Glu Val Thr Ile Pro Thr Leu Trp Gln
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Thr Ser Met Asp Phe Ile Lys Lys Asn Pro Glu Tyr Leu Asp Glu Asn
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Asn Leu Met Ser Phe Leu Ser Asn Asp Asn Gly Lys Thr Tyr Asn Leu
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Cys His Phe Trp Ser Asn Phe Glu Ile Ala Asn Leu Asn Leu Trp Arg
325 330 335

Ser Pro Ala Tyr Arg Glu Tyr Phe Asp Thr Leu Asp His Gln Gly Gly
340 345 350

Phe Phe Tyr Glu Arg Trp Gly Asp Ala Pro Val His Ser Ile Ala Ala
355 360 365

Ala Leu Phe Leu Pro Lys Asp Lys Ile His Tyr Phe Ser Asp Ile Gly
370 375 380

Tyr His His Pro Pro Tyr Asp Asn Cys Pro Leu Asp Lys Glu Val Tyr
385 390 395 400

Asn Ser Asn Asn Cys Glu Cys Asp Gln Gly Asn Asp Phe Thr Phe Gln
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Gly Tyr Ser Cys Gly Lys Glu Tyr Tyr Asp Ala Gln Gly Leu Val Lys
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Pro Lys Asn Trp Lys Lys Phe Arg Glu
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Gly Ala Val Ile Val Leu Leu Leu Thr Leu Asn Ser Asn Ser Arg Thr
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Gln Gln Tyr Ile Pro Ser Ser Ile Ser Ala Ala Phe Asp Phe Thr Ser
35 40 45

Gly Ser Ile Ser Pro Glu Gln Gln Val Ile Ser Glu Glu Asn Asp Ala

50 55 60

Lys Lys Leu Glu Gln Ser Ala Leu Asn Ser Glu Ala Ser Glu Asp Ser
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Glu Ala Met Asp Glu Glu Ser Lys Ala Leu Lys Ala Ala Ala Glu Lys
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Ala Asp Ala Pro
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<212> DNA
<213> Homo sapiens

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            20                  25                  30

Ala Pro Gly Arg Pro Pro Ser Val Ser Ala Leu Asp Gly Asp Pro Ala
        35                  40                  45

Ser Leu Thr Arg Glu Val Ile Arg Leu Ala Gln Asp Ala Glu Val Glu
    50                  55                  60

Leu Glu Arg Gln Arg Gly Leu Leu Gln Gln Ile Gly Asp Ala Leu Ser
65                  70                  75                  80

Ser Gln Arg Gly Arg Val Pro Thr Ala Ala Pro Pro Ala Gln Pro Arg
                85                  90                  95

Val Pro Val Thr Pro Ala Pro Ala Val Ile Pro Ile Leu Val Ile Ala
            100                 105                 110

Cys Asp Arg Ser Thr Val Arg Arg Cys Leu Asp Lys Leu Leu His Tyr
        115                 120                 125

Arg Pro Ser Ala Glu Leu Phe Pro Ile Ile Val Ser Gln Asp Cys Gly
    130                 135                 140

His Glu Glu Thr Ala Gln Ala Ile Ala Ser Tyr Gly Ser Ala Val Thr
145                 150                 155                 160

His Ile Arg Gln Pro Asp Leu Ser Ser Ile Ala Val Pro Pro Asp His
                165                 170                 175

Arg Lys Phe Gln Gly Tyr Tyr Lys Ile Ala Arg His Tyr Arg Trp Ala
            180                 185                 190

Leu Gly Gln Val Phe Arg Gln Phe Arg Phe Pro Ala Ala Val Val Val
        195                 200                 205

Glu Asp Asp Leu Glu Val Ala Pro Asp Phe Phe Glu Tyr Phe Arg Ala
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Thr Tyr Pro Leu Leu Lys Ala Asp Pro Ser Leu Trp Cys Val Ser Ala
225                 230                 235                 240
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Leu Leu Tyr Arg Thr Asp Phe Phe Pro Gly Leu Gly Trp Leu Leu Leu
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Ala Glu Leu Trp Ala Glu Leu Glu Pro Lys Trp Pro Lys Ala Phe Trp
        275                 280                 285

Asp Asp Trp Met Arg Arg Pro Glu Gln Arg Gln Gly Arg Ala Cys Ile
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Arg Pro Glu Ile Ser Arg Thr Met Thr Phe Gly Arg Lys Gly Val Ser
305                 310                 315                 320

His Gly Gln Phe Phe Asp Gln His Leu Lys Phe Ile Lys Leu Asn Gln
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Gln Phe Val His Phe Thr Gln Leu Asp Leu Ser Tyr Leu Gln Arg Glu
            340                 345                 350

Ala Tyr Asp Arg Asp Phe Leu Ala Arg Val Tyr Gly Ala Pro Gln Leu
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Gln Val Glu Lys Val Arg Thr Asn Asp Arg Lys Glu Leu Gly Glu Val
    370                 375                 380

Arg Val Gln Tyr Thr Gly Arg Asp Ser Phe Lys Ala Phe Ala Lys Ala
385                 390                 395                 400

Leu Gly Val Met Asp Asp Leu Lys Ser Gly Val Pro Arg Ala Gly Tyr
                405                 410                 415

Arg Gly Ile Val Thr Phe Gln Phe Arg Gly Arg Arg Val His Leu Ala
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Pro Pro Pro Thr Trp Glu Gly Tyr Asp Pro Ser Trp Asn
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<212> DNA
<213> Homo sapiens

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<400> 21

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35 40 45

Leu Pro Gln Leu Val Gly Val Ser Thr Pro Leu Gln Gly Gly Ser Asn
50 55 60

Ser Ala Ala Ala Ile Gly Gln Ser Ser Gly Glu Leu Arg Thr Gly Gly
65 70 75 80

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Leu Thr Ser Val Pro Val Pro His Thr Thr Ala Leu Ser Leu Pro Ala
        115                 120                 125

Cys Pro Glu Glu Ser Pro Leu Leu Val Gly Pro Met Leu Ile Glu Phe
    130                 135                 140

Asn Met Pro Val Asp Leu Glu Leu Val Ala Lys Gln Asn Pro Asn Val
145                 150                 155                 160

Lys Met Gly Gly Arg Tyr Ala Pro Arg Asp Cys Val Ser Pro His Lys
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Val Ala Ile Ile Ile Pro Phe Arg Asn Arg Gln Glu His Leu Lys Tyr
            180                 185                 190

Trp Leu Tyr Tyr Leu His Pro Val Leu Gln Arg Gln Gln Leu Asp Tyr
        195                 200                 205

Gly Ile Tyr Val Ile Asn Gln Ala Gly Asp Thr Ile Phe Asn Arg Ala
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Lys Leu Leu Asn Val Gly Phe Gln Glu Ala Leu Lys Asp Tyr Asp Tyr
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Thr Cys Phe Val Phe Ser Asp Val Asp Leu Ile Pro Met Asn Asp His
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Asn Ala Tyr Arg Cys Phe Ser Gln Pro Arg His Ile Ser Val Ala Met
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Asp Lys Phe Gly Phe Ser Leu Pro Tyr Val Gln Tyr Phe Gly Gly Val
        275                 280                 285

Ser Ala Leu Ser Lys Gln Gln Phe Leu Thr Ile Asn Gly Phe Pro Asn
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Asn Tyr Trp Gly Trp Gly Gly Glu Asp Asp Asp Ile Phe Asn Arg Leu
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Gln Arg Phe Asp Arg Ile Ala His Thr Lys Glu Thr Met Leu Ser Asp
        355                 360                 365

Gly Leu Asn Ser Leu Thr Tyr Gln Val Leu Asp Val Gln Arg Tyr Pro
    370                 375                 380

Leu Tyr Thr Gln Ile Thr Val Asp Ile Gly Thr Pro Ser
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